# NORTH CAROLINA DIVISION OF **AIR QUALITY**

# **Application Review**

Issue Date: ??

Region: Raleigh Regional Office

County: Halifax

NC Facility ID: 4200007

Inspector's Name: Dawn Reddix **Date of Last Inspection:** 05/31/2019

**Compliance Code:** 3 / Compliance - inspection

### **Facility Data**

Applicant (Facility's Name): WestRock Kraft Paper, LLC

**Facility Address:** 

WestRock Kraft Paper, LLC

**Facility Contact** 

**Environmental Manager** 

Mike Knudson

(252) 533-6280

27870

100 Gaston Road

Roanoke Rapids, NC

100 Gaston Road

Roanoke Rapids, NC 27870

SIC: 2621 / Paper Mills Exc Building Paper

NAICS: 322121 / Paper (except Newsprint) Mills

Facility Classification: Before: Title V After: Title V Fee Classification: Before: Title V After: Title V

# Permit Applicability (this application only)

SIP: N/A NSPS: N/A **NESHAP:** N/A PSD: N/A

**PSD Avoidance:** N/A NC Toxics: N/A 112(r): N/A Other: N/A

### **Contact Data**

#### **Authorized Contact Technical Contact** Benjamin White Mike Knudson General Manager **Environmental Manager** (252) 533-6335 (252) 533-6280 100 Gaston Road 100 Gaston Road Roanoke Rapids, NC Roanoke Rapids, NC 27870 27870

### **Application Data**

**Application Number:** 4200007.18C **Date Received:** 04/17/2018

**Application Type:** Modification **Application Schedule:** TV-Sign-501(b)(2) Part II

**Existing Permit Data Existing Permit Number:** 01649/T65 Existing Permit Issue Date: 10/15/2019 **Existing Permit Expiration Date:** 02/28/2023

### Total Actual emissions in TONS/YEAR:

CY	SO2	NOX	voc	со	PM10	Total HAP	Largest HAP
2018	571.56	928.62	578.13	1087.05	171.60	203.38	145.81 [Methanol (methyl alcohol)]
2017	326.57	986.51	600.13	964.37	179.22	253.05	208.39 [Methanol (methyl alcohol)]
2016	54.79	1231.80	368.04	893.07	170.96	210.53	167.41 [Methanol (methyl alcohol)]
2015	62.50	1335.78	322.76	739.13	239.52	152.15	108.89 [Methanol (methyl alcohol)]
2014	72.13	1446.35	348.56	773.70	229.76	178.15	134.56 [Methanol (methyl alcohol)]

Review Engineer: Brian Bland **Comments / Recommendations:** 

Issue 01649/T66 Date: ?? **Review Engineer's Signature:** 

Permit Issue Date: ??/2020

Permit Expiration Date: 02/28/2023

# I. Introduction and Purpose of Application

Located in Roanoke Rapids, Halifax County, WestRock Kraft Paper, LLC (WestRock) formerly known as KapStone Kraft Paper is a pulp and paper mill that manufactures brown paper stock. Brown paper stock is used to make cardboard and shopping bags.

Application No. 4200007.18C was submitted to satisfy the 15A NCAC 02Q .0501(b)(2) (was 15A NCAC 02Q .0501(c)(2) at the time of issuance of the part I permit) requirement to submit a complete Title V Air Permit application within twelve (12) months after commencing operation for the emission sources in Application No. 4200007.17A. This application will be processed as the "second step" of two-step 15A NCAC 02Q .0501(b)(2) significant modification.

On February 8, 2017, the facility received their 1<sup>st</sup> step permit pursuant to the rules at 15A NCAC 02Q .0501(c)(2) and 02Q .0504 for the addition of an alternative operating scenario for MACT Subpart MM. As the review document for this applications contains a full discussion of the modification, and this information has not changed, these details will not be included as part of this review. However, a Word copy of the review document for Application No. 4200007.17A has been attached to this review.

# **II. Application Chronology**

Air Permit No. 01649T60 for the addition of an alternative operating scenario for MACT Subpart MM was issued pursuant to Application No. 4200007.17A and included the following requirement:			
For completion of the two-step significant modification process pursuant to 15A NCAC 02Q .0501(c)(2) or (d)(2), the Permittee shall file an amended application following the procedures of Section 15A NCAC 02Q .0500 within one year from the date of permit issuance for modification of these existing sources (ID Nos. ES-08-PU-012, ES-08-PU-013 and ES-09-PU-004).			
Application No. 4200007.18C to complete two-step significant modification process initiated with Application No. 4200007.17A was received.			
The required application fee for Application No. 4200007.18C was received and this application is considered complete.			
Draft permit and review document sent to the Raleigh Regional Office (RRO).			
Draft permit forwarded to Mike Knudson and Matt Upton of WestRock.			
WestRock responds that they have reviewed the draft permit and have no issues with it.			
Draft permit sent to public notice and EPA review.			
Public comment period ends.			
EPA comment period ends.			

### III. Permit Modification/Changes

Page(s)	Page(s) Section		Description of Change(s)	
	Old	New		
All	A	11	Updated dates and permit revision number	
3	Secti	on 1	Removed **** footnote and associated emission source tags	
			Updated minimum scrubber injection rate (ID Nos. 11-CD-	
			001-001 and 11-CD-001-002) <sup>1</sup>	
21-22	2.1 F.4.i	2.1 F.4.h	Corrected historical numbering errors	
	2.1 F.4.h	2.1 F.4.i		
	2.1 F.4.i	2.1 F.4.j		
21	2.1 F.4.h	2.1 F.4.i	Removed remnants of BLS recordkeeping as this requirement	
			was removed in Permit No. 01649T57	
27	2.1 I.1.c	2.1 I.1.c	Updated minimum scrubbing liquid flow rate <sup>1</sup>	
42	2.1 K.4.i	2.1 K.4.i	Corrected historical error "2.1 K.4.g and i above" to	
			"2.1 K.4.g and h above"	
60	2.2 A.1.g	2.2 A.1.g	Corrected historical error. The Total Organic Carbon (TOC)	
			in lb/day to aerator horsepower (hp) in hp/day ratio (TOC/hp)	
			shall be maintained <u>below</u> 24.6.	
69	2.2 C. 4	N/A	Removed "15A NCAC 02Q .0504: OPTION FOR	
			OBTAINING CONSTRUCTION AND OPERATION	
			PERMIT" permit application requirement	

<sup>&</sup>lt;sup>1</sup> The minimum scrubbing liquid flow rate was updated from 1,560 gallons per minute (gpm) to 1,513 gpm based on stack testing performed July 12-13, 2016 (Tracking No. 2016-142ST, February 23, 2018 stack test review memorandum). WestRock initially requested this revised monitoring data be incorporated in their air permit in Application No. 2400036.17C.

### IV. Regulatory Review

The facility is currently subject to the following regulations:

- 15A NCAC 02D .0503 "Particulates from Fuel Burning Indirect Heat Exchangers"
- 15A NCAC 02D .0515 "Particulates from Miscellaneous Industrial Processes"
- 15A NCAC 02D .0516 "Sulfur Dioxide from Combustion Sources"
- 15A NCAC 02D .0521 "Control of Visible Emissions"
- 15A NCAC 02D .0524 "New Source Performance Standards" [Dc, DD]
- 15A NCAC 02D .0530 "Prevention of Significant Deterioration"
- 15A NCAC 02D .0614 "Continuous Assurance Monitoring"
- 15A NCAC 02D .1100 "Control of Toxic Air Pollutants"
- 15A NCAC 02D .1111 "Maximum Achievable Control Technology" [Subparts GGGG, ZZZZ, DDDDD]
- 15A NCAC 02D .1806 "Control and Prohibition of Odorous Emissions"
- 15A NCAC 02Q .0317 "Avoidance Conditions" [PSD]

As there are no changes to these regulatory requirements, a review of these regulations will not be included in this document.

### V. Facility Compliance Status

The last full inspection of this facility was completed on May 31, 2019 by Dawn Reddix of the RRO. At that time, the facility "appeared to be operating in compliance with all permit requirements."

# VI. Other Regulatory Concerns

A P.E. seal was not required for this application.

A zoning consistency form was not required for this modification.

An application fee of \$947 was required and received for this modification.

Halifax County has triggered increment tracking under PSD for  $PM_{10}$ ,  $SO_2$  and NOx. However, no tracking is necessary for this modification as there is no change in emissions associated with this modification.

Public notice and EPA review is required for the completion of this two-step significant process. A notice of the DRAFT Title V Permit shall be made pursuant to 15A NCAC 02Q .0521. The notice will provide for a 30-day comment period, with an opportunity for a public hearing. Copies of the public notice shall be sent to persons on the Title V mailing list and EPA. Pursuant to 15A NCAC 02Q .0522, a copy of each permit application, each proposed permit and each final permit shall be provided to EPA. Also pursuant to 02Q .0522, a notice of the DRAFT Title V Permit shall be provided to each affected State at or before the time notice provided to the public under 02Q .0521 above. The associated dates are included in the Application Chronology in Section 3 above.



### NORTH CAROLINA DIVISION OF **AIR QUALITY**

# **Application Review**

Issue Date: February 8, 2017

Region: Raleigh Regional Office

County: Halifax

NC Facility ID: 4200007 Inspector's Name: Will Wike **Date of Last Inspection:** 11/29/2016

**Compliance Code:** 3 / Compliance - inspection

Permit Applicability (this application only)

SIP: **NSPS:** 

**NESHAP:** MACT MM

PSD:

**PSD** Avoidance: **NC Toxics:** 112(r): Other:

# **Facility Data**

Applicant (Facility's Name): KapStone Kraft Paper Corporation

**Facility Address:** 

KapStone Kraft Paper Corporation

100 Gaston Road

Roanoke Rapids, NC 27870

SIC: 2621 / Paper Mills Exc Building Paper NAICS: 322121 / Paper (except Newsprint) Mills

Facility Classification: Before: Title V After: Title V Fee Classification: Before: Title V After: Title V

#### **Contact Data**

**Facility Contact Authorized Contact** Mike Knudson Rob Kreizenbeck Mike Knudson **Environmental Manager** Vice President of Mill **Environmental Manager** (252) 533-6280 (252) 533-6280 **Operations** (252) 533-6485 PO Box 458 PO Box 458 Roanoke Rapids, NC PO Box 458 Roanoke Rapids, NC 27870 Roanoke Rapids, NC 27870 27870

# **Application Data**

**Application Number:** 4200007.17A

**Date Received:** 01/17/2017 **Application Type:** Modification

**Application Schedule:** TV-Sign-501(c)(2) Part I

**Existing Permit Data Existing Permit Number:** 01649/T59 Existing Permit Issue Date: 07/08/2016 **Existing Permit Expiration Date: 12/31/2017** 

### **Total Actual emissions in TONS/YEAR:**

CY	SO2	NOX	voc	со	PM10	Total HAP	Largest HAP
2015	62.50	1335.78	322.76	739.13	239.52	152.15	108.89 [Methanol (methyl alcohol)]
2014	72.13	1446.35	348.56	773.70	229.76	178.15	134.56 [Methanol (methyl alcohol)]
2013	400.71	1585.29	246.84	728.03	260.73	123.24	81.30 [Methanol (methyl alcohol)]
2012	818.21	1379.46	286.67	689.96	284.10	168.53	127.38 [Methanol (methyl alcohol)]
2011	880.80	1412.92	283.90	569.60	358.42	173.22	132.80 [Methanol (methyl alcohol)]

**Technical Contact** 

Review Engineer: Brian Bland **Comments / Recommendations:** 

Issue 01649/T60 **Review Engineer's Signature:** Date: February 8, 2017

Original signed

Permit Issue Date: 02/08/2017 Permit Expiration Date: 12/31/2017

### I. Facility Description

Located in Roanoke Rapids, Halifax County, KapStone Kraft Paper (KapStone) is a pulp and paper mill that manufactures brown paper stock. Brown paper stock is used to make cardboard and shopping bags

### **II. Purpose of Application**

The purpose of this application is to add a MACT Subpart MM alternative operating scenario. Specifically, the individual single source filterable particulate emission limits will be added to the permit and the existing alternative "bubble" limits will remain. This proposed modification constitutes a significant modification of the Title V Air Quality Permit. This permit modification will be processed using the two-step significant modification procedures pursuant to 15A NCAC 02Q .0501(c)(2).

Additionally, the Division of Air Quality (DAQ) will administratively correct the requirement to reestablish the alternative MACT MM particulate matter (PM) limits based on increased black liquor solids (BLS) throughput in No. 7 Recovery Furance. MACT MM requires only a notification of DAQ, not a reestablishment of PM limits, if BLS throughput during the most recent performance is exceeded by 10%.

# **III.Application Chronology**

	September 13, 2016	DAQ receives Permit Application No. 4200007.16C for a one-step significant modification.	
		Application No. 4200007.16C, consisting of a request to replace the alternative MACT MM compliance method with the single source compliance method, as well as changing source testing/operating parameter language, is withdrawn.	
	January 17, 2017	Application No. 4200007.17A is received.	
	January 31, 2017	Application fee for 4200007.17A is received and this application is considered administratively complete.	
	February 3, 2017	Draft permit forwarded to Michael Knudson of KapStone and Amy Marshall of AECOM.	
	February 3, 2017	Draft permit and review document forwarded to Raleigh Regional Office (RRO) for comments.	
	February 6, 2017	Michael Knudson responds that KapStone has no comments on the draft.	
	February 7, 2017	Charles McEachern responds that the drafts look fine and RRO recommends issuance of the permit.	

### **IV. Changes to Existing Air Permit**

Page(s)	Section	Description of Change(s)	
All	All	Update dates and permit revision number	
3 - end	All	Update permit revision number in header	
10	Permitted Items	Correct ID Nos. in footnote ***	
		Add footnote **** and tag associated emission sources	
65	Table 2.2 C	Update table to reflect emissions limits of both the	
		Primary Operating Scenario (POS) and Alternate	
		Operating Scenario (AOS)	

Page(s)	Section	Description of Change(s)	
N/A	2.2 C.1.b (T59)	Remove 35 percent opacity paragraph for No. 7 Recovery Furnace from the Emission Limits section. Note: Item 2.2 C.1. j, in the Monitoring section, includes a more detailed description of the 35 percent opacity requirement that will remain unchanged	
66	2.2 C.1.b	Add single source PM limits from Subpart MM [40 CFR 63.862(a)(1)(i)] as Primary Operating Scenario	
66	2.2 C.1.c	Label existing alternative [40 CFR 63.862(a)(1)(ii)] limits as Alternate Operating Scenario	
66	2.2 C.1.e	Update wording to accommodate two operating scenarios	
68	2.2 C.1.q	Remove historical error that required recalculation of the overall PM emissions limit if the Permittee "increases the black liquor solids firing rate for the No. 7 Recovery Furnace during any 24-hour averaging period by more than 10 percent above the level measured during the most recent performance test"  Update permit language	
69	2.2 C. 3	Add "15A NCAC 02Q .0508(j): ALTERNATIVE OPERATING SCENARIOS" recordkeeping requirement	
69	2.2 C. 4	Add "15A NCAC 02Q .0504: OPTION FOR OBTAINING CONSTRUCTION AND OPERATION PERMIT" permit application requirement	

# V. Compliance Status

The last full compliance inspection was on July 13, 2016 when the facility was inspected by Mr. Will Wike of the RRO. Based on observations made during the inspection, KapStone Kraft Paper appeared to be operating in compliance with all permit requirements.

# VI. Regulatory Review

#### Alternate Operating Scenario

As described in the application: "The mill's No. 7 Recovery Furnace, No. 7 Smelt Dissolving Tank, and Lime Kiln are subject to the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Chemical Recovery Combustion Sources at Kraft Pulp Mills (40 CFR 63, Subpart MM). This regulation sets out filterable PM emission standards to limit emissions of metal HAP. The Roanoke Rapids Mill currently complies with the rule using the alternate procedure for establishing an overall chemical recovery system emission limit in 63.862(a)(l)(ii) and individual emission limits under 63.865(a). This methodology is commonly referred to as the "bubble" approach because the sources under the bubble can be over- or under-controlled as long as the total system emission limit is equivalent to the combined "single source" limits in 63.862(a)(l)(i)."

KapStone has requested the single source limits be added to permit while retaining the existing "bubble" limits as an alternative operating scenario. Under the "bubble" limit, total particulate matter emissions from the three sources cannot exceed 1.379 lb/TBLS, but there is no overall limit associated with the single source limits. A summary table of the individual limits is provided below. It should be noted that the No. 7 Recovery Furance has a 15A NCAC 02D .0530 BACT limit of 0.021 gr/dscf (see Section 2.1 F of Air Permit No. 01649T60). Additionally, although the units changed on the No. 7 Smelt Tank emission limit, based on the operating conditions in the Initial Performance Test (IPT), these PM limits are basically equivalent (see the April 28, 2006 source test memorandum associated with the January 2005 test for related calculations).

**Subpart MM PM limits for chemical recovery sources** 

Emission Source	Existing Limit	Single Source Limit
Lime Kiln	0.14 gr/dscf	0.064 gr/dscf
No. 7 Recovery Furance	0.021 gr/dscf	0.044 gr/dscf
No. 7 Smelt Tank	0.094 gr/dscf	0.20 lb/TBLS

### Removal of reestablishment of NESHAP Subpart MM PM limits

The facility's air permit has historically contained a requirement that the alternative PM emissions limits be reestablished of if the BLS throughput exceeded the IPT BLS throughput by more than 10%. However, Subpart MM doesn't require a reestablishment of the limits due to BLS throughput exceeding the IPT BLS throughput by more than 10%. 40 CFR 63.862(a)(1)(ii)(D) requires reestablish the emissions limits if "The air pollution control system for any existing kraft or soda recovery furnace, smelt dissolving tank, or lime kiln for which an emission limit was established ... is modified ... or replaced" or "Any kraft or soda recovery furnace, smelt dissolving tank, or lime kiln for which an emission limit was established ... is shut down for more than 60 consecutive days." Meanwhile, 40 CFR 63.867(b)(3) requires a notification if above described actions take place as well as if "A continuous monitoring parameter or the value or range of values of a continuous monitoring parameter for any process unit is changed" or "The black liquor solids firing rate for any kraft or soda recovery furnace during any 24-hour averaging period is increased by more than 10 percent above the level measured during the most recent performance test."

## VII. Recent Permit History

July 8, 2016 - Permit No. 01649T59 issued. Modifications included: (1) Application No. 4200007.16A submitted on March 10, 2016 to revise the 112(j) Case-by-Case HAP limits for No. 1 Power Boiler (ID No. ES-11-CU-001) and (2) Application No. 4200007.16B submitted on May 3, 2016 to remove the 15A NCAC 02D .1404 requirements from Section 2.1 I of the air permit. This modification was using the one-step significant modification procedures pursuant to 15A NCAC 02Q .0501(d)(2).

June 6, 2016 - Permit No. 01649T58 issued pursuant to Application No. 4200007.15B to revise the tune-up frequency, from annually to every five years, for No. 4 Package Boiler (ID No. ES-11-CU-035) because it uses an automatic oxygen trim system to maintain excess air at the desired level.

April 6, 2016 - Permit No. 01649T57 issued pursuant to Application No. 4200007.15E to revise the monitoring required for compliance with the existing No. 7 Recovery Furnace BACT limits.

March 8, 2016 - Permit No. 01649T56 issued pursuant to Application No. 4200007.15D. The purpose of this application was to reconfigure the woodyard.

August 27, 2015 - Permit No. 01649T55 issued pursuant to Application Nos. 4200007.14B, 4200007.14C and 4200007.15A. The purpose of this application was to: revise the minimum flow rate of the two scrubbers installed on No. 1 Power Boiler (.14B), update the PSD Avoidance Condition pH-SO2 removal efficiencies emission factors (.14C), and remove the CAIR NOx limit from the air permit is based on the reversal of the vacature of the Cross-State Air Pollution Rule (CSAPR) rule (.15A).

September 4, 2013 - Permit No. 01649T54 issued pursuant to Application No. 4200007.13B. This permitting event was a 02Q .0501(d)(1) modification to the existing Title V permit, and thus satisfying the requirements both in 15A NCAC 02D .0530 "Prevention of Significant Deterioration" and 15A NCAC 02Q .0500 "Title V Procedures".

January 10, 2013 - Permit No. 01649T53 issued pursuant to Application No. 4200007.11A. This application was for the renewal of KapStone's Title V air quality permit.

June 14, 2012 - Permit No. 01649T52 issued pursuant to Application No. 4200007.12A. The purpose of this application was to install a temporary enclosed flare.

April 30, 2012 - Permit No. 01649T51 issued pursuant to Application No. 4200007.12B. The purpose of this application was a minor modification to increase pulp and paper production capacity through mechanical changes to several existing processes.

March 30, 2012 - Permit No. 01649T50 issued pursuant to Application No. 4200007.11B. The purpose of this application was a significant modification to add one natural gas/distillate fuel-fired boiler with a maximum heat input of 245 million Btu per hour to produce steam for energy generation and provide heat for the pulp and paper processes.

December 21, 2011 - Permit No. 01649T49 issued pursuant to Application No. 4200007.11C. The purpose of this application was a minor modification to add a diesel-fired portable bark grinder with a 1,200 hp maximum rating which will be used to process bark into fuel.

February 21, 2011 - Permit No. 01649T48 issued pursuant to Application No. 4200007.09D. The purpose of this application was a Part 2 MACT "Hammer" application for seven existing boilers.

August 10, 2010 - Permit No. 01649T47 issued pursuant to Application No. 4200007.10B. The purpose of this application was a minor modification to add natural gas to the list of fuels that can be fired in the lime kiln.

June 23, 2010 - Permit No. 01649T46 issued pursuant to Application No. 4200007.10A. The purpose of this application was a minor modification to revise Specific Condition 2.1 M.3 to use specific NOx emission factors for each engine(s) if available, AP-42 otherwise, used by the Porta Chipper (ES-01-PU-014).

November 13, 2009 - Permit No. 01649T45 issued pursuant to Application No. 4200007.09E. The purpose of this application was to administratively correct the annualized BLS firing rate from 547,000 tons per year to 584,000 tons per year.

June 16, 2009 - Permit No. 01649T44 issued pursuant to Application No. 4200007.09C. The purpose of this application was to add the ability to utilize petroleum coke (petcoke) as a fuel for the lime kiln.

February 13, 2009 - Permit No. 01649T43 issued pursuant to Application No. 4200007.09B. The purpose of this application was a minor modification to add the capability to burn ultra-low sulfur (ULS) No. 2 fuel oil with black liquor solids (BLS) as a fuel for the No. 7 recovery furnace.

October 18, 2008 - Permit No. 01649T42 issued pursuant to Application No. 4200007.08A. The purpose of this application was a minor modification for the addition of a portable log chipper.

September 12, 2007 - Permit No. 01649T41 issued pursuant to Application No. 4200007.07B. This application was for an Administrative Amendment to remove the Boiler MACT standard from the Air Permit at the request of the facility. On June 8, 2007, the United States Court of Appeals for the District of Columbia Circuit issued a decision vacating in its entirety and remanding the NESHAP for Industrial, Commercial, and Institutional Boilers and Process Heaters, or Boiler MACT, contained in 40 CFR 63 Subpart DDDDD.

July 23, 2007 - Permit No. 01649T40 issued pursuant to Application No. 4200007.07A. The purpose of this application was to incorporate enforceable conditions pertaining to the emissions and health-related impact of manganese from two distillate and residual-fired boilers and a coal, woodwaste, residual oil-fired boiler.

March 30, 2007 (with an effective date of April 16, 2007) - Permit No. 01649T39 issued pursuant to Application No. 4200007.05C. Although the initial Title V permit (Permit No. 01649T34) was previously issued, it was adjudicated by KapStone. The purpose of this application is to update the initial Title V Permit and add any additional language necessary for emission standards whose compliance dates are subsequent to the initial Title V permit.

# VIII. Recommendation

The NC DAQ recommends the issuance of Air Permit No. 01649T60 for KapStone Kraft Paper Corporation located in Roanoke Rapids, Halifax County, NC.

